

CERTIFIED MILL TEST REPORT

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**The Best Value
Price, Quality, Service
All The Time.**

LOG NO. 301890 PAGE 1
 BONNEY FORGE
 P.O. BOX 390 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17066-0390
 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4908
 www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 08/04/06

CUSTOMER'S Order No.: 4877273-00

Bonney Order No 036703

SHIPPED TO: CCTF CORPORATION

MARK 533

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS.
------	----------	---------	--

SA/A350-LF2 CL 1

004	100	55807	7690143	36 - 12 X 1 8160 LF2 WELD B										
					C	.200	MN	1.100	P	.016	S	.022	SI	.190
					NI	.010	CU	.030	CO	.002	CR	.040	MO	.010
					V	.000	AL	.018	NB	.014				
					CE(LONG FORMULA) = 0.40									
					T/S 73750 Y/S 50375 EL 34.00 RA 64.70									
					BRINELL HARDNESS1: 132 HARDNESS2: 135									
					CHARPY: -50F 27.0, 32.0, 34.0 (FT/LBS)									
					AVERAGE 31.0									

***** CONTINUED ON NEXT PAGE *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.



by Kylee Fleck
 Kylee Fleck

QUALITY CONTROL MANAGER

CERTIFIED MILL TEST REPORT



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LOG NO. 301890 PAGE 2

BONNEY FORGE
P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17066-0330
(814) 542-2545 • (800) 345-7540 • FAX (814) 542-4905
www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 08/04/06

CUSTOMER'S Order No.: 4877273-00

Bonney Order Nb036703

SHIPPED TO: CCTF CORPORATION

Mat#553

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM QUANTITY LOT NO.

GRADE OR SPECIFICATION NO.
CHEMICAL ANALYSIS PHYSICAL PROPERTIES, REMARKS

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MR0103-2003 AND NACE MR0175-2003.
3. CERTIFYING TO ASTM A350 LF2 04A REVISION.
4. THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.
5. THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.
6. THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.
7. THE MATERIAL SUPPLIED WAS INSPECTED AND MANUFACTURED IN ACCORDANCE WITH EN DIN 10204 3.1. B.
8. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.

***** END OF CERTIFICATION *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.



by Kylee Fleck

Kylee Fleck

QUALITY CONTROL MANAGER

HEAT: 38857 SKU: 7585240 DESC: 4 600 RF BLIND FLG A350LF2



METALFAR
 PRODOTTI INDUSTRIALI S.P.A.
 23061 OSSANA, BIELLA (CI) ITALY
 Tel. 081.655441 - Fax. 081.655440
 MATERIAL TEST DEPARTMENT
 SALA PROVEDA ANALISI MATERIALI

CONTRATTO
 VENTURA AVVICINATA
 SYSTEM CERTIFIED 37/01/01
 = ISO 9001:2000 =

ITACO LINTKO
 CESTER VERESE - STATION ROAD
 LEW HAMPSTON HERTFORDSHIRE GB

INSPECTION CERTIFICATE EN 10204/3.1

CERTIFICATO DI COLLAUDO
 Nr. 19122 / 19/95/2001
 INVOICE / FATTORE: 17471 / 18/05/2007
 S. 50195
 DEL. NOME / SCALE: 28851 / 18/05/2007

HEAT CODE COLLA	HEAT COLLA	ITEM POS.	YOUNG P.O. % CHANGE	QMS REFERENCE NO. CHANGE	QUANTITY QUANTITA'	DESCRIPTION DESCRIZIONE	DEL. ACCORDANCE TO MATERIALE IN ACCORDO A	VISUAL & DIMENSIONAL USO DIMENSIONALE	QMS ORIGINE											
38857	HEAT COLLA	0023	170854C7	6606145 0664	4	BLIND 600 RF 4"	LF2	ASME/ANSI B16.5	EUROPE											
73479	HEAT COLLA	0022	170854C7	66061504 0058	5	W/A 1500 RF 1.172" 160 B165	LF2	ASME/ANSI B16.5	EUROPE											
16375	HEAT COLLA	0046	170854C7	66061504 0109	30	W/A 1500 RF 2" 225 SQ. CRT LF2	LF2	ASME/ANSI B16.5	EUROPE											
38728	HEAT COLLA	0015	170154C1	66002340 0408	38	W/A 130 RF 1.172" 85	LF2	ASME/ANSI B16.5	EUROPE											
38446	HEAT COLLA	0022	170154C1	66002340 0662	10	W/A 500 RF 3" 23	LF2	ASME/ANSI B16.5	EUROPE											
73479	HEAT COLLA	0016	170154C1	66002353 0049	5	W/A 1500 RF 1.172" 160 B165	LF2	ASME/ANSI B16.5	EUROPE											
38857	HEAT COLLA	0023	ASPK A350 LF2 CL1/2		0.185	0.230	1.106	0.014	0.014	0.110	0.066	0.010	0.630	0.180	0.027	0.203	0.005	0.025	0.429	EUROPE
73479	HEAT COLLA	0022	ASPK A 105		0.185	0.190	1.150	0.015	0.012	0.080	0.050	0.010	0.018	0.140	0.024	0.060	0.040	0.028	0.165	EUROPE
16375	HEAT COLLA	0046	ASPK A350 LF2 CL1/2		0.180	0.210	1.130	0.017	0.013	0.100	0.050	0.010	0.015	0.170	0.023	0.092	0.009	0.025	0.109	EUROPE
38728	HEAT COLLA	0015	ASPK A350 LF2 CL1/2		0.190	0.230	1.080	0.012	0.010	0.100	0.050	0.010	0.017	0.170	0.030	0.003	0.006	0.025	0.115	EUROPE
16446	HEAT COLLA	0022	ASPK A350 LF2 CL1/2		0.200	0.230	1.120	0.012	0.013	0.090	0.060	0.010	0.015	0.130	0.024	0.002	0.008	0.025	0.124	EUROPE
73479	HEAT COLLA	0016	ASPK A 105		0.185	0.230	1.150	0.015	0.011	0.060	0.050	0.010	0.013	0.140	0.024	0.006	0.006	0.028	0.108	EUROPE
38857	HEAT COLLA	0023	TEST SPECIFICATION ASME/ANSI B16.5	388.0	537	31.0	59.0	164-168	0.0	0.0	0.0	0.0	0.0	65	65	65	1	0.0	0.0	
73479	HEAT COLLA	0022	TEST SPECIFICATION ASME/ANSI B16.5	340.0	550	31.0	58.0	165-170	0.0	0.0	0.0	0.0	0.0	84	84	84	1	0.0	0.0	
16375	HEAT COLLA	0046	TEST SPECIFICATION ASME/ANSI B16.5	367.0	578	28.0	57.0	159-163	0.0	0.0	0.0	0.0	0.0	60	58	62	1	0.0	0.0	
38728	HEAT COLLA	0015	TEST SPECIFICATION ASME/ANSI B16.5	377.0	525	29.0	60.0	159-163	0.0	0.0	0.0	0.0	0.0	60	60	60	1	0.0	0.0	
38446	HEAT COLLA	0022	TEST SPECIFICATION ASME/ANSI B16.5	383.0	542	28.0	56.0	164-168	0.0	0.0	0.0	0.0	0.0	66	62	68	1	0.0	0.0	
73479	HEAT COLLA	0016	TEST SPECIFICATION ASME/ANSI B16.5	346.0	550	31.0	58.0	165-170	0.0	0.0	0.0	0.0	0.0	84	84	86	1	0.0	0.0	

MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003

MATERIAL IN ACCORDANCE TO
 MATERIALE IN ACCORDO A

HEAT TREATMENT
 TRATTAMENTO TERMICO

QUALITY CONTROL DEPARTMENT
 UFFICIO CONTROLLO QUALITA'

INSPECTION AUTHORITY
 AUTORITA' COLLAUDO

MANUFACTURING DEPARTMENT
 SEZIONE PRODUZIONE



BBACCHI PAVIO

HEAT: 28609 SKU: 2680101 DESC: 2 A333-6 STD Z245.1 GR359 SRL

SRL CUT FROM DRL

2680101

2 A333 GR359

3

MILL'S QUALITY CERTIFICATE

APPLICABLE TO EN 15001 (PQ) (EN 15001:2008)

MILL'S QUALITY S.A.
 13000 WINDY BLDG
 HENRI DUCLOS, S.A.S.U
 BOULEVARD
 13000 WINDY BLDG
 13000 WINDY BLDG

NO. OF ORDER SHEETS: 70735

NO. ORDER SHEETS: 70735

DATE: 15.04.2015

NO. OF ORDER SHEETS: 70735

MILL'S QUALITY S.A. SERVICES CANADA INC.
 2200, 441-104 Avenue E.W. Calgary, Alberta, T2P 0B9, Jean Turry, President (403) 269-8831 (985)
 CITE VERIFIABLE

REVALUER SYMEL, PRESS ACCORDING TO ASTM A 333/A 333M & S&L (UNICE MR 0115)

ASTM A 333/A 333M & S&L (UNICE MR 0115)

APPLY EN 15001 (PQ) (EN 15001:2008) TO THE ENTIRE RANGE OF PRODUCTS
 MANUFACTURED FROM 15.04.2015

NO.	DESCRIPTION	UNIT	QTY	REMARKS	DATE	BY
1	ASTM A 333/A 333M & S&L (UNICE MR 0115)	TONNES	245		15.04.2015	JM
2	ASTM A 333/A 333M & S&L (UNICE MR 0115)	TONNES	245		15.04.2015	JM



OUT OF QUALITY CERTIFICATION REPORT

REVALUER SYMEL

CERTIFIED MILL TEST REPORT



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LOG NO. 316027 PAGE 1
 BONNEY FORGE
 P.O. BOX 330 • 14418 CROGHAN PIKE • MOUNT UNION, PA 17066-0330
 (814) 542-2545 • (800) 345-7540 • FAX (814) 542-1908
 www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 11/28/07

CUSTOMER'S Order No.: 4029758-00

Bonney Order No. 8000022183

SHIPPED TO: CCTF CORPORATION (DAKVILLE)
1327 CORNWALL ROAD

DAKVILLE, ONL6J 7T5 Canada

ITEM	QUANTITY	LOI NO.	GRADE OR SPECIFICATION CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, & MARKS
			SA/A105N
001	10	56330 7550618	3 X 3 STD A105N WELD B C .200 MN 1.050 P .008 S .024 SI .240 NI .010 CU .040 CO .002 CR .060 MO .004 V .028 AL .001 NB .000 BN .002 CE(LONG FORMULA) = 0.40 T/S 78000 Y/S 55625 EL 31.60 RA 68.35 BRINELL HARDNESS1: 137 HARDNESS2: 141
002	10	56760 7550665	10 X 3 STD A105N WELD B C .200 MN 1.010 P .013 S .019 SI .210 NI .040 CU .210 CO .002 CR .040 MO .020 V .000 AL .020 NB .014 CE(LONG FORMULA) = 0.40 T/S 76000 Y/S 51250 EL 33.20 RA 68.55 BRINELL HARDNESS1: 127 HARDNESS2: 132
004	91	56442 7559326	1X1/2 3M A105N THRD T C .200 MN 1.020 P .012 S .024 SI .250 NI .040 CU .110 CO .002 CR .070 MO .013 V .025 AL .001 NB .001 CE(LONG FORMULA) = 0.40 T/S 78250 Y/S 49500 EL 33.55 RA 65.60 BRINELL HARDNESS1: 150 HARDNESS2: 147
006	150	57270 7551655	5-4X1 3M A105N THRD T C .200 MN 1.000 P .012 S .018 SI .190 NI .040 CU .180 CO .004 CR .070 MO .020 V .000 AL .020 NB .015 CE(LONG FORMULA) = 0.40 T/S 76000 Y/S 53500 EL 32.00 RA 66.00 BRINELL HARDNESS1: 144 HARDNESS2: 144

***** CONTINUED ON NEXT PAGE *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

By 
Chris Bozri

CMTR: REV 1

QUALITY PROCESS MANAGER

HEAT: 57270 SKU: 7551665 DESC: 1X4T05 3000 TOL A105N

CERTIFIED MILL TEST REPORT



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LOG NO. 316027 PAGE 3

BONNEY FORGE
P.O. BOX 330 • 14488 CROGHAN PKE • MOUNT UNION, PA 17088-0330
(814) 542-2646 • (800) 343-7646 • FAX (814) 542-4908
www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 11/28/07

CUSTOMER'S Order No.: 4023758-00

Bonney Order No. 8000022183

SHIPPED TO: CCTF CORPORATION (DAKVILLE)
1387 CORNWALL ROAD

DAKVILLE, ONL6J 7T5 Canada

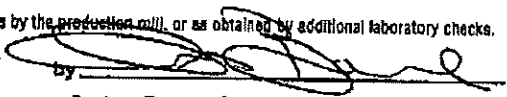
ITEM QUANTITY LOT NO.

GRADE OR SPECIFICATION NO.
CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
3. CERTIFYING ASTM A105-05 / ASME SA105-04 EDITION.
4. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.
5. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
6. THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MR0103-2005 AND NACE MR0175-2002.

***** END OF CERTIFICATION *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by 
Cris Boozel

CMTR: REV 1

QUALITY PROCESS MANAGER

HEAT: 57270 SKU: 7551665 DESC: 1X4T05 3000 TOL A105N



Material Test Report

Heat Code: 20M

An Ameri-Forge Group Company
13770 Industrial Rd., Houston, TX 77015

ISO 9001:2000 Certified

Sales: (713) 868-4421 Fax: (713) 455-8368

CUTF-EDMONTON 5407 53RD AVENUE T6R3G2 EDMONTON ALB CA	PO: PO#4223273 Item Code: 36912C0101-00212 Item Desc: FLG 02.00 0600 WN RF STD A105 NRM COFER Supplier: CMC	Sales Order: 61313 City Shipped: 25 Supplier Heat: 25/036	Line: 18
--	--	---	----------

Spec: ASCH A 105/A 105M-03/ASME SA 105/SA 105M-04 Normalized

Element	(%wt)	Ladle	Product	EPCRA	CAS#	Element	(%wt)	Ladle	Product	EPCRA	CAS#
C	Carbon	0.17				Ni	Nickel	0.34		✓	7440-02-0
Mn	Manganese	0.87		✓	7439-96-5	Cr	Chromium	0.10		✓	7440-47-3
P	Phosphorus	0.018				Mo	Molybdenum	0.013			
S	Sulphur	0.028				V	Vanadium	0.002			
Si	Silicon	0.18				Co	Cobalt	0.002			
Cu	Copper	0.35		✓	7440-50-8	C.E.		0.58			

Mechanical				Heat Treat			
Test Lab	AFG	Norm. Temp. (F)	1675				
Test Bar Size	SACRIFICIAL PIECE	Norm. (Hr)	4.0				
SHW	163-163	Norm. Cooling Type	NR				
N/g (lb)	26.0	Norm. Location	AFG				
RA (%)	62.0						
Tensile Specimen Size (in)	0.502						
Tensile (ksi)	76.6	Other					
Yield (ksi)	46.0	Country of Origin	USA (UOI)				
Gauge Length	2.00						

7530064

No Weld repair performed. Chemical Analysis results shown are actual. Forgings are capable of passing hydrostatic test compatible with the appropriate rating. Elongation taken from a round specimen. All material supplied under this order is certified to be free of mercury contamination and no mercury bearing equipment was used in manufacturing, fabrication or testing. Yield strength was determined using the 0.2% offset method.

EPCRA Supplier Notification: This product may contain one or more toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986) and 40 C.F.R. Part 372. Potentially reportable chemicals are indicated with a checkmark in the "EPCRA" column and a Chemical Abstracts Services (CAS) registry number is provided for each such chemical in addition to the percent by weight of the chemical present in this product. It is your responsibility alone to determine whether your facility is required to submit a Toxic Release Inventory Report under EPCRA Section 313.

Certification No.: 127035
Certification Date: 10/4/2007

Kevin Papich - Tech. Svcs. Manager

This report is issued in compliance with the requirements of EN10204 3.1 / ISO 10474 2.1.b

HEAT: YJM-SKU: 7530064 DESC: 2 600 RF WN FLG STD A105N

HEAT: AC091 SKU: 7580021 DESC: 1 600 RF WN S160 LF2

INSPECTION CERTIFICATE

시험 성적서

Certificate No 07908042-0000015
 Customer COTF
 Customer P.O. No. 4880766-00
 Material SA/A350LF2CL1-048

W/O No. 07908042
 (재입사번호)

Date of Issue 2007.04.20
 (발급일자)



KOREA FLANGE CO., LTD.
 한국플랜지공업주식회사
 164, Dongbu-Dong, Dong-Ku,
 Ulsan-Metropolitan, KOREA
 울산광역시 동구 동북동 164번지

ITEM NO. (항목)	Article (종형)	Quantity (수량)	Mechanical Properties (기계적특성)	Tension Test(인장시험)				Hardness Test (경도시험)		Impact Test (충격시험)			Code No (재용번호)
				V.S. (인장강도)	T.S. (인장강도)	EL. (연신율)	RA (인장수축률)	HV	HG	1	2	3	
039	AN 300 BL RF 2	150	AC091	MIN 36000 MAX 36000	70000 95000	22	30	152 149	197	33	31	35	7585615
041	AN 600 WN RF XS 1	75	AC091	46800	75000	41.0	60.0	152 149	153	33	31	35	7580213
042	AN 600 WN RF S120 6	10	AC092	46700	75400	39.0	61.0	152 149	150	33	32	31	7587745
043	AN 600 WN RF S160 1	50	AC091	46800	75000	41.0	60.0	152 149	152	33	31	35	7580021
044	AN 600 WN RF S160 11/2	35	AC091	46800	75000	41.0	60.0	152 149	152	33	31	35	7580022

Chemical Composition (화학조성)	C	SI	Mn	P	S	NI	Cr	MO	V	Cu	Cb	I	Ceq
AC091	0.30	0.15	0.60	0.035	0.040	0.40	0.300	0.120	0.080	0.400	0.020	1	0.43
AC092	0.20	0.26	0.91	0.016	0.005	0.01	0.010	0.010	0.010	0.010	0.010	1	0.36
AC092	0.21	0.25	0.94	0.015	0.004	0.01	0.010	0.010	0.010	0.010	0.010	1	0.37

Legend: (1): Austenitize (B); Product Analysis P.W.H.T; Post Weld Heat Treatment A.C.I; W.C; Water Good; W.Q; Water Quenching

Heat Treatment (열처리)	Simulated P.W.H.T	Heating Rate	T/hr above	Cooling Rate	T/hr to	Visual & Dimension Inspection (외수 및 외관검사)
Normalizing (소둔)	900 °C 2.0 hr AC	R	10	R	10	GOOD
Quenching (소염)	°C hr	R	10	R	10	
Tempering (소려)	°C hr	R	10	R	10	
Solution (고용열처리)	°C hr	R	10	R	10	

Works Test Certificate to EN 10204/3.1
 Flanges supplied to ASME B16.5, NACE MR-01-75; N(MAX 1.0); Hardness(MAX 227)
 -ASME B16.5, NACE MR-01-75, CAT II.

Department Manager
 (부장보장부장)

Surveyor To :
 (검사관)

We hereby certify that material described herein has been tested and satisfied as above in accordance with the specification.
 본 성적서에 명시된 소재는 상기 사양에 의거 시험 되었으며 그 결과가 만족함을 증명함.

* 본 시험 성적서 취, 변조 시 사면서 위조로 불이익을 당할 수 있습니다.

CLIENT / Customer / Client
CCTE CORPORATION (EDMONTON)
 5407 - 83 AVENUE NW
 EDMONTON, AB T6B 3K2
 CANADA

CERTIFICADO DE INSPECCION
 Works Certificate - Certificat d'Usine
 FECHA: 06/10/2008
 N.º: 108086
 HORA: Page 2

DIN EN 10204 / 3.1
 ISO 10474 / 3.1



PRODUCTO: **FLANGES**
 ASME B16.4
 SU PEDIDO N.º: **ART77548**
 Year Order No. / Vers. Ord. N.º

DE: **20080208**
 Confir. por PED 07228EC
 by YDU Rinkberg
 N.º de Doc. CDO 02 7443

ULMA F.O.E.L.A. S.COOP.
 P.º Edifici. 3 - Apart. 14
 20000 ORTIG (Edifici. SPAIN)
 TEL: 34 - 913 780032
 FAX: 34 - 913 781818
 Email: info@ulma.com

ALTERNAL CONGRUENTE: **ASAMBLAJA 1-048**
 Material: **ASTM A182**
 ACABO DE PINTADO: **NACE MPA-1+2/3/3**
 Standard: **CSA - Z245.12-05**
 E = Llave V = Ojalero básico

DEPARTAMENTO: **QUALITY ASSURANCE**
 Section: **DEPT. 01**

PARTE	CANTIDAD	DESCRIPCION	LOTE
54 7581059	1	THR 4 800LB RF A350LF2	1995
58 7581059	77	WN 4 600LB S80 RF A350LF2	2036
63 7581059	1	THR 4 600LB RF A350LF2	1855
65 7581059	24	BLIND 8 800LB RF A350LF2	2249
74 7581059	1	WN 8 1500LB S90 RF A350LF2	2116
74 7581059	1	WN 8 1500LB S90 RF A350LF2	1945

OBJETIVOS	COLADA N.º	RESISTENCIA	LONGITUD	ALICATA	RESISTENCIA	CHARPY V	TEMPERATURA
NE	256R6	528	314	30.40	68	77	75
NE	2036	531	339	29.90	62	57	88
NE	1855	528	345	28.60	78	86	82
NE	2249	530	345	31.20	62	81	91
NE	2116	520	342	31.80	80	78	90
NE	1945	520	339	33.00	71	80	87

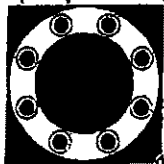
COMPOSICION QUIMICA - STEEL MARKERS LADE ANALYSIS - ANALYSE CHIMIQUE

Elemento	C %	SI %	Mn %	P %	S %	Cr %	NI %	Mo %	Nb %	V %	Ch %	CEQ %
128R6	0.190	0.235	1.170	0.015	0.003	0.080	0.080	0.030	0.007	0.001	0.270	0.402
1855	0.170	0.240	1.280	0.008	0.004	0.090	0.070	0.040	0.007	0.001	0.210	0.415
2036	0.170	0.210	1.180	0.014	0.002	0.100	0.070	0.010	0.007	0.001	0.228	0.405
2249	0.180	0.240	1.180	0.016	0.004	0.080	0.110	0.020	0.004	0.007	0.249	0.395
256R6	0.170	0.240	1.170	0.018	0.006	0.080	0.070	0.020	0.007	0.001	0.218	0.405
2249	0.170	0.235	1.180	0.015	0.003	0.110	0.090	0.016	0.007	0.001	0.190	0.409

ULMA
 ULMA F.O.E.L.A. S.COOP.
 P.º Edifici. 3 - Apart. 14
 20000 ORTIG (Edifici. SPAIN)
 TEL: 34 - 913 780032
 FAX: 34 - 913 781818
 Email: info@ulma.com

ET INSPECTOR
 White Inspector - L. Thompson

NOTES: N. NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR



OFFICINE NICOLA GALPERTI & FIGLIO S.p.A.

Sede Legale Amministrativa: 23824 DERVIO (LC) - Via Enrico Fermi, 46
 C.C.I.A.A. Lecce n. 00201990138 - R.E.A. n. 79615 CP - P.IVA IT00206180138
 Succursale - Uffici Amministrativi / Workshop - Viterbo - Office Manufacturing address:
 22010 GERA LARIO (CO) - Località S. Agata - Tel (0344) 87200
 Telefax (0344) 87210 - E-MAIL ADDRESS galperti@galperti.com

SPETT.LE/MESSA

GALPERTI CANADA(1999) INC.

**3931 - 76 AVENUE
 EDMONTON, ALBERTA, T6B 2S8 (CDN)**

CERTIFICATO DI COLLAUDO EN 10204 VS ORDINE/INTERNAL JOB
 TEST/CERTIFICATE EN 10204

030989/1 04/04/2007 E423 060648 06/07/2006

POS/ITEM	DESCRIZIONE/DESCRIPTION	QUANTITA' QUANTITY	SA	MATERIALE/MATERIAL	N° COLATA/PROVA HEAT N°/TEST N°	ACCIERIA STEEL MFG	#
002/002	1,50" 2500 SW RJ SOLID LF/52 B1 FSCS NACE MR-01-75	25	S	Z245.12-M01 GR.359	9180/34	OLIFER/ACP SPA	A
005/005	12" 150 WN RF STD LF/52 B1 FSF4 NACE MR-01-75	25	S	Z245.12-M01 GR.359	350338/26	VOEST ALPINE	B
024/024	4" 600 WN RF STD LF/52 B1 FSF4 NACE MR-01-75	500	S	Z245.12-M01 GR.359	52486.R/20	RUBIERA SPA	C

ANALISI CHIMICA/CHEMICAL ANALYSIS

	C %	MAN %	SI %	P %	S %	CR %	NI %	MO %	CU %	V %	SN %	AL %	NB %	TI %	N %	O3%	FC%	FL%
A	0.150	1.190	0.200	0.001	0.001	0.080	0.160	0.040	0.170	0.0005	0.010	0.021			0.007	0.120	0.348	0.394
A C	0.150	1.180	0.195	0.001	0.001	0.085	0.150	0.045	0.180	0.0005	0.010	0.037	0.004	0.001	0.007	0.130	0.346	0.394
B	0.172	1.200	0.218	0.007	0.008	0.160	0.030	0.004	0.040	0.0170	0.005	0.042	0.003	0.003	0.006	0.164	0.372	0.412
B C	0.170	1.195	0.220	0.006	0.006	0.150	0.035	0.010	0.035	0.0150	0.005	0.062	0.003	0.003	0.006	0.160	0.369	0.408
C	0.145	1.160	0.230	0.012	0.012	0.140	0.160	0.040	0.220	0.0260	0.014	0.025	0.004	0.002	0.009	0.180	0.338	0.404
C C	0.142	1.155	0.220	0.010	0.009	0.145	0.150	0.035	0.230	0.0250	0.014	0.030	0.004	0.002	0.009	0.180	0.334	0.400

NOTE/NOTES

03=Chromium + Molybdenum
 FC=Carbon Equivalent Short Formula
 FL=Carbon Equivalent Long Formula

C = ANALISI DI PRODOTTO/CHECK ANALYSIS

CARATTERISTICHE MECCANICHE/MECHANICAL PROPERTIES

#	TIPO/TYPE	TRAZIONE/TENSILE						RESILLENZA/CHAMPY TESTER				DUREZZA HB HARDNESS FAVERAGE		
		Ø PROVETTA DIAMETER	SEZIONE AREA	LUNGHEZZA LENGTH	TEMP. TEMPERATURE	ROTTURA TENILE	SNERVAMENTO YIELD	ALL ELONG %	CONTR. REDUCT. %	TIPO/TYPE	TEMP. TEMPERATURE		VALORI/VALUES	
		mm	mm ²	mm	C	Mpa	Mpa							KV
A	S	12,50	122,70	50,00	20	455	359	20,0				-50	Min. 27 Med. 27	197
A	O	12,50	122,70	50,00	20	552	379	29,8	70,2			-50	112 - 113 - 117	172
B	S	12,50	122,70	50,00	20	455	359	20,0				-50	Min. 27 Med. 27	197
B	O	12,50	122,70	50,00	20	580	389	30,2	69,8			-50	106 - 109 - 110	173
C	S	12,50	122,70	50,00	20	455	359	20,0				-50	Min. 27 Med. 27	197
C	O	12,50	122,70	50,00	20	578	382	29,6	69,4			-50	110 - 106 - 112	168

NOTE/NOTES

Lateral Exp/Shear Area (Average)
 A = mm.1,25/ 80% B = mm.1,40/ 80% C = mm.1,30/ 80%

O = OTTENUTE/OBTAINED
 S = STANDARD

TRATTAMENTI TERMICI/HEAT TREATMENTS

A Normalized at 900 dgr.C for 2 h.-Cooling from 900 dgr.C in still air
 B Normalized at 900 dgr.C for 1.1/2 h.-Cooling from 900 dgr.C in still air
 C Normalized at 900 dgr.C for 1.1/2 h.-Cooling from 900 dgr.C in still air

NOTE GENERAL/GENERAL NOTES

FINITURE/ROUGHNESS
 FSF4=Ra 3,2 - Ra 6,3

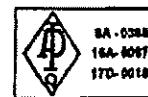
 STANDARD/STANDARD
 B1 = ASME B16.5 Ed.2003

NOTE/NOTES

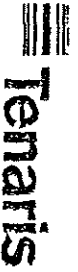
Material according to Sour Service.

MARCHIO DI FABBRICA TRADE MARK
 DATA COLLAUDO INT. INSPECT DATE
 04/04/2007
 ENTE UFFICIALE DI COLLAUDO INSPECTION AUTHORITY

COLLAUDATORE INT. INSPECTOR
 F. BARILANI



4" S40 GR359 CAT2 HEAT-23324



INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

305-255-5-111
 Dr. Jorge A. Soria 1753
 (2720) Belfin Calabazas
 Siveras Avda, Argentina
 (54) 3485 433120-717
 (54) 3485 433425 fax

Producto / Product CARBON STEEL FOR SERVICES AT LOW TEMPERA	Expediente/ Manufacturing Order 514887.03	Numero / Number 397887	Fecha / Date 13/09/2007
Norma / Standard ASTM A333/JASME S433 CSA Z445-1-02 CANADA TENARIS PA.18-01 REV.01	Orden de Compra/ Purchase Order 590770	Item 00003	Referencia del Cliente / Customer Reference
Dimensiones / Dimensions 114.30 x 6.02 mm 4 1/2 x 0.237 inches	Peso Nominal / Nominal Weight 16.06 KG/MET 10.79 LB/FT	Superficie / Surface INT BARE/EXT VARNISHED	Extremos / Ends BEVEL AT 30 DEG. APISLASO
Longitud / Length S.R. (SP)	Grado / Grade 16/3591SS	Cantidades / Quantities 620 Pcs 620 Pcs	4084.01 m 13333.37 Ft
			143168 Lb

ENSAYOS DE TRACCION / TENSILE TEST

Celda / Essay	N° de Ensayo	Condición de la probeta	Temp de Ene	Dimensiones	Sección	Fuercia / Yield Strength		Retorno U.T.S		Relación F/R	Alargamiento Elongation	Red. de area	Dureza / Hardness Tipo / type: BHN
						Req. Min	Req. Max	Req. Min	Req. Max				
Heat	Test N°	Specimen condition	Test Temp	Size	Area	Offset Method	EUL Method	Retn. Min	Retn. Max	YS/UTS Ratio	Lo	Req. Min	Req. Max
	Zone	Estado	N° PT	Type	Ort	V. Min	Req. Min	V. Min	Req. Min	2"	Req. Min	Req. Min	V. Min
		Ext		Temp	mm	0.2%	Max	Max	Max	mm	Max	Max	Max
23324	606485	CB	PRO	ST	L	24.87	359	488.6	455	50.8	20.0	34.7	156
	606487	CB	PRO	ST	L	24.99	359	482.3	455	50.8	20.0	34.2	156
	606489	CB	PRO	ST	L	24.86	359	481.6	455	50.8	20.0	35.0	151
	606476	CB	PRO	ST	L	26.01	359	490.0	455	50.8	20.0	32.1	148
	606483	CB	PRO	ST	L	24.84	359	416.3	455	50.8	20.0	33.4	154
	606487	CB	PRO	ST	L	24.82	359	411.2	455	50.8	20.0	34.3	152
	606480	CB	PRO	ST	L	24.81	359	471.8	455	50.8	20.0	31.4	150
	606482	CB	PRO	ST	L	24.94	359	388.2	455	50.8	20.0	35.3	152
	606483	CB	PRO	ST	L	24.94	359	412.2	455	50.8	20.0	36.0	144
	606484	CB	PRO	ST	L	26.15	359	424.6	455	50.8	20.0	31.3	159
	606485	CB	PRO	ST	L	25.18	359	386.9	455	50.8	20.0	30.5	161
	606486	CB	PRO	ST	L	25.08	359	387.0	455	50.8	20.0	34.1	163

NOTA / NOTE:

Aprobamiento Curvado / Bending Test
 Fletado Bend Test
 Satisfact N/A
 Asociado Flaming Test
 Reparado Flange Test
 Ens. De anillo expandido Ring expanding Test
 Ens. De Tracción de anillo Ring tensile Test
 RE = Rectangular
 CI = Cilindrica / Cylindrical
 ST = Segmento Tubular / Tubular segment
 TU = Transversal
 C/B = Cuerpo / Body
 R/U = Resacado / Upset
 P/A = Promedio / Average
 Min = Minimum
 Max = Máximo / Maximum
 L = Longitudinal
 T = Transversal
 PT = Tubo / Pipe
 EXT = Extremo / End
 M = Medio / Middle
 VOB = Valor Opuesto / Opposite value
 E = Conciencia de marca / Stenciling starting
 O = Extremo opuesto al E / Opposite extreme to E
 CH = Ensayos en Caliente / Hot Testing.

